

Notice of Allowability

Application No.

10/761,694

Applicant(s)

LEE, SEUNG-WOO

Examiner

Steven E. Holton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 5/21/2007.
2. ☒ The allowed claim(s) is/are 1 and 3-23.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

This Office Action is made in response to applicant's amendment filed on 5/21/2007. Claims 1 and 3-23 are currently pending in the application. An action follows below:

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Marisa Dubuc on 7/9/07.

2. The application has been amended as follows:

Please amend claim 14 to be:

14. A method for driving a liquid crystal display apparatus, comprising:

generating current frame first compensated grayscale data in response to receiving previous frame grayscale data from a memory and current frame grayscale data received from an external source;

calculating a data difference between the current frame first compensated grayscale data and the current frame grayscale data;

generating current frame second compensated grayscale data in response to the current frame first compensated grayscale data and the data difference between the previous frame compensated grayscale data and the previous frame grayscale data;

storing the current frame grayscale data and the data difference in the memory;

applying a gate signal to gate lines;

applying a data voltage corresponding to the current frame second compensated grayscale data to data lines.

Please amend claim 19 to be:

19. A method for driving a liquid crystal display apparatus comprising:

generating current frame first compensated grayscale data in response to receiving previous frame grayscale data from a memory and current frame grayscale data received from an external source;

generating current frame second compensated grayscale data in response to the current frame first compensated grayscale data and a data difference between a previous frame compensated grayscale data and a previous frame grayscale data;

calculating a data difference between the current frame second compensated grayscale data and the current frame grayscale data;

storing the current frame grayscale data and the data difference between the current frame second compensated grayscale data and the current frame grayscale data in the memory;

applying a gate signal to gate lines;

applying a data voltage corresponding to the current frame second compensated grayscale data to data lines.

3. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a grayscale voltage compensation device and method for driving a liquid crystal display device. Independent claims 1 and 14 identify the uniquely distinct features "generating second compensated grayscale data in response to the first compensated grayscale data and the grayscale data for the current frame" and "generating third compensated grayscale data in response to the first compensated grayscale data and previously stored compensated grayscale data". The Examiner notes that the "previously stored compensated grayscale data" is referring to a difference value of the difference between previous frame compensated data ($G'n-1$) and previous frame uncompensated data ($Gn-1$). The closest prior art, Lee; Lee et al. (USPgPub: 2003/0193460, and Kondo et al. (USPN: 7071930) disclose grayscale compensation methods of driving a liquid crystal display using previous and current data, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Independent claims 3 and 19 identify the uniquely distinct features "generating second compensated grayscale data in response to the first compensated grayscale data and previously stored compensated grayscale data" and "generating third compensated grayscale data in response to the second compensated grayscale data for the current frame and the grayscale data for the current frame". The Examiner notes

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that the "previously stored compensated grayscale data" is referring to a difference value of the difference between previous frame compensated data (G''_{n-1}) and previous frame uncompensated data (G_{n-1}). The closest prior art, Lee; Lee et al. (USPgPub: 2003/0193460, and Kondo et al. (USPN: 7071930) disclose grayscale compensation methods of driving a liquid crystal display using previous and current data, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

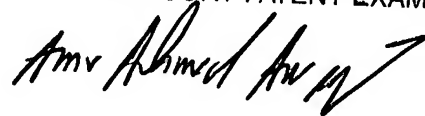
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven E. Holton
Division 2629
July 17, 2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", is written over the printed name and title.